
Citation:

White, H and Chadwick, HK and Shaw, N and Gillgrass, L and Wood, A and Peckham, DG (2017) Evaluation of an RCT web-based intervention for adherence in cystic fibrosis. In: 31st North American Cystic Fibrosis Conference, 2nd - 4th November 2017, Indianapolis.

Link to Leeds Beckett Repository record:

<https://eprints.leedsbeckett.ac.uk/id/eprint/5155/>

Document Version:

Conference or Workshop Item (Presentation)

The aim of the Leeds Beckett Repository is to provide open access to our research, as required by funder policies and permitted by publishers and copyright law.

The Leeds Beckett repository holds a wide range of publications, each of which has been checked for copyright and the relevant embargo period has been applied by the Research Services team.

We operate on a standard take-down policy. If you are the author or publisher of an output and you would like it removed from the repository, please [contact us](#) and we will investigate on a case-by-case basis.

Each thesis in the repository has been cleared where necessary by the author for third party copyright. If you would like a thesis to be removed from the repository or believe there is an issue with copyright, please contact us on openaccess@leedsbeckett.ac.uk and we will investigate on a case-by-case basis.

Evaluation of an RCT web-based intervention for adherence in cystic fibrosis

White H^{1,2}, Shaw N,³ Gillgrass L, Wood A,³ Chadwick H,² Peckham DG.^{2,3}
Leeds Beckett University,¹ University Leeds,²
Adult Cystic Fibrosis Unit (Leeds Teaching Hospitals Trust) Leeds, UK³

Presenter Disclosure

Helen White PhD

The following relationship exists related to this presentation:

- *Gilead Science - Grant support [Grant No. IN-UK-205-D001]*
- *UKCRN Portfolio ID 13624*

Background

- Reported adherence rates in CF are as low as 40-50%
- In our own adult patient (n = 410) adherence is 63% (medication possession ratio) *White et al (2017)*
- On-line adherence programmes for adults with CF have not yet been fully evaluated
- We aimed to determine the impact on adherence of a web-based intervention for adults with CF

White H, Shaw N, Denman S, Pollard K, Wynne S, Peckham DG. (2017) Variation in lung function as a Wmarker of adherence to oral and inhaled medication in cystic fibrosis *European Respiratory Journal* 2017 Mar 8;49(3).

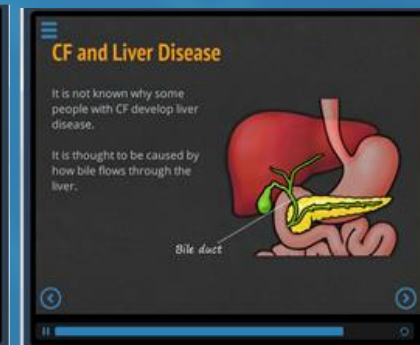
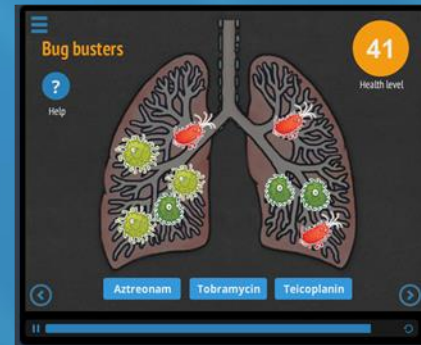
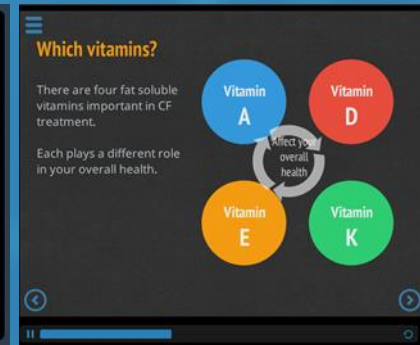
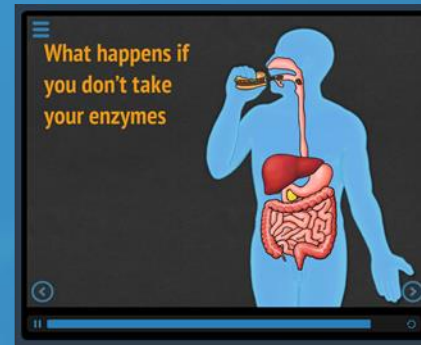
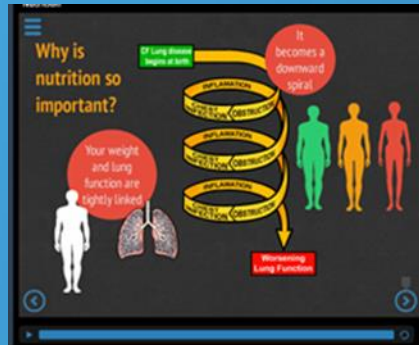
Phase 1 (Module development)

- 6 on-line modules developed
- 40 video stories filmed and embedded within all giving reasons to change and motivations to take treatment eg
 - Parenthood
 - Further study
 - Availability for new treatments



Development

- Interactive material
- Integrated 'drag and drop', games, quiz
 - Nutrition
 - Pancreatic enzyme replacement therapy
 - Vitamins
 - Airways & treatments
 - Antibiotics
 - Liver disease



2nd phase - RCT design

- Usual care or web-based intervention (n=100)
- Participants issued with tablet technology
- Granted structured access over 12 months
- Modules released at intervals
- Access tracked on-line
- Facility to gather participant feedback on the system



Results

- Data collected at baseline, 6 months and 1 year
 - **Adherence (Medication possession ratio)***
 - Knowledge questionnaire*
 - QoL (CFQ-R)*
 - Anthropometric data
 - Respiratory function [FEV_1 (%), FVC(%), FEV_1 rate of decline (%) and coefficient variation FEV_1 (%)
 - Fat soluble vitamin status

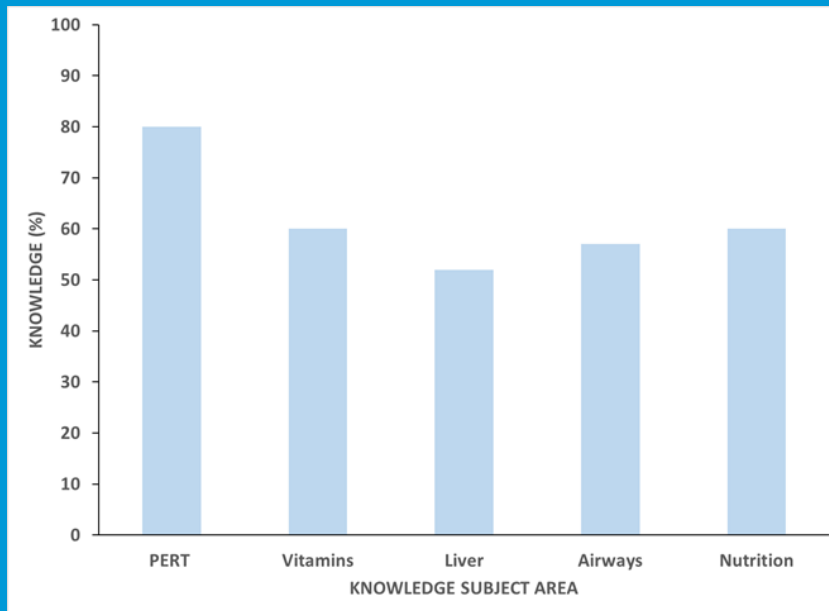
* Collected at baseline and 1 year only

Interim results

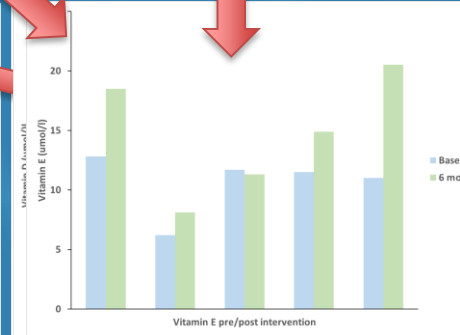
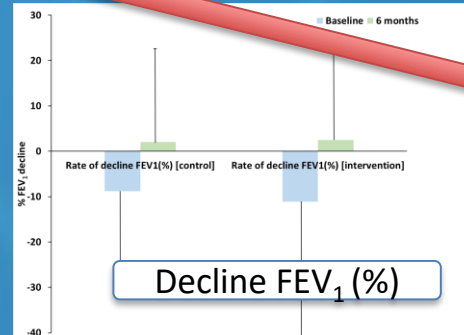
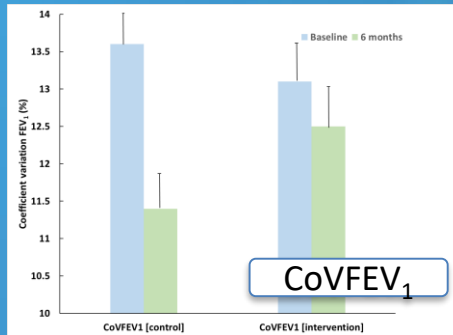
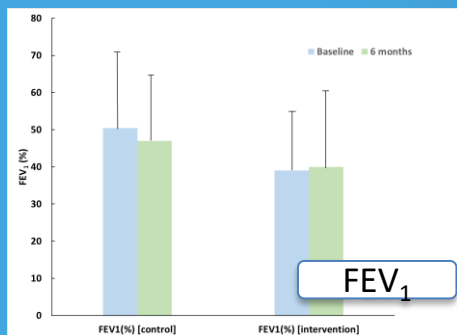
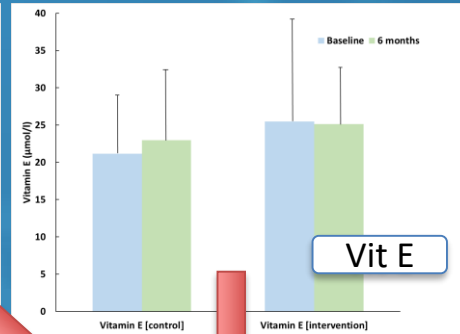
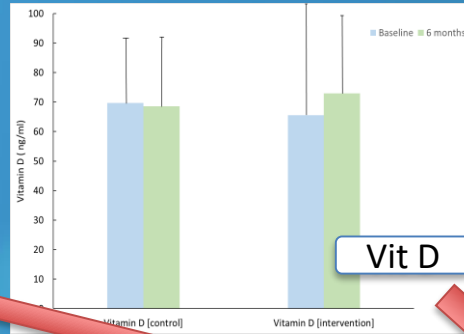
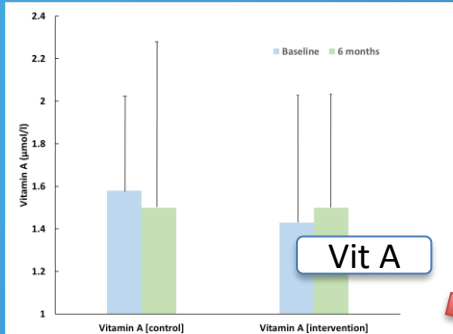
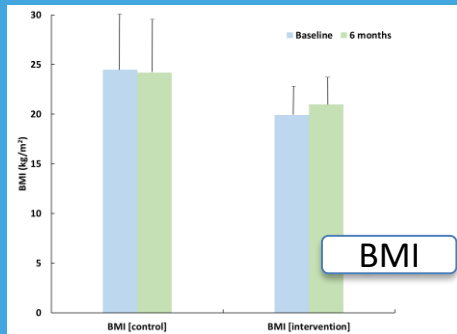
Baseline

N=100 Reporting interim data n=60	Intervention n=31	Control n=29	P-value
Gender (male)	16 (51.6%)	15 (51.7%)	NS
Age (years)	27.0	30.6	P=0.51
Pseudomonas	67.7%	62%	P=0.79
CFRD (%)	12 (38.7%)	13 (44.8%)	P=0.028
Genotype DF508/DF508 (%)	18 (58.1%)	18 (64.3%)	P=0.61
FEV ₁ (%)	39% (± 17.5)	50.4% (± 21.2)	P=0.028
BMI (kg/m ²)	20.0 (± 3.0)	24.6 (± 5.3)	P=0.001
Adherence (MPR) (%)	66% (± 24.6)	54% (± 28.6)	P=0.43
Baseline knowledge (%)	64.7% (± 13.8)	58% (± 2.8)	P=0.61

Knowledge



Interim data – 6 months



Significance adjusted for baseline measure, BMI, Age and lung function]

Conclusion

- A web based adherence intervention has shown
 - Improved trends in Vitamin A,D, (but no significant changes in values at 6 months above controls)
 - Significant improvements for those with suboptimal Vitamin levels at baseline were shown
 - No changes in lung function, variation in lung function or rate of lung decline above that of controls
 - No changes in BMI above that of controls
 - Full evaluation at 1 year is now required